

## **Arsenic and other Heavy Metals in Shallow Groundwater in Utah Valley, Utah**

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**Abstract.** American Fork, Provo River and Spanish Fork flow westward across the Wasatch Range and heavily-populated Utah Valley to drain into Utah Lake. Within Utah Valley the average fluvial As concentrations for American Fork (As = 0.152 mg/L) and Provo River (As = 0.342 mg/L) exceed the EPA standards for freshwater streams for chronic exposure (As = 0.150 mg/L) and acute exposure (As = 0.340 mg/L), respectively, but which are not unusual for rivers affected by mine tailings. On the other hand, As measurements in wells in Utah Valley with depths exceeding 36 m have shown no As levels exceeding As = 0.002 mg/L. The objective of this study is to determine whether elevated levels of As occur in shallow groundwater in Utah Valley. The objective is being addressed by analyzing water samples from the “pioneer wells” in Utah Valley, shallow (depths < 10 m), hand-dug, brick-lined wells constructed in the 19<sup>th</sup> century, which many residents still maintain as their “emergency water supply.” The database of Utah Division of Water Rights lists only 26 shallow wells in Utah Valley. Other pioneer wells are being sought through conversations with water departments, historical societies and local residents. Since many pioneer wells have been located in the floodplain of Spanish Fork, fluvial samples from Spanish Fork are being analyzed also. Samples are being analyzed for As and the transition metals normally associated with As (Fe, Cu, Mn, Ni, Co, Cr, Zn) using the PerkinElmer Optima 8000 ICP-OES. Results will be reported at the meeting.

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